In The Claims:

Please amend the claims as set forth below.

1. (Original) A magnetically enhanced convection heat sink for use with a gas that exhibits paramagnetic properties, said heat sink comprising:

a heat sink member for dissipating heat from a heat source,

a magnetic source creating a magnetic field concentrated at a first location, the intensity of the magnetic field decreasing from the first location to a second location, said heat sink member positioned within said magnetic field and in a gas flow path between the first location and the second location,

said heat sink member heating said gas entering the heat sink at the first location, wherein as the gas becomes warmer the gas is displaced by cooler gas causing the warmer gas to move toward the second location as it is further heated by the surface of the heat sink.

2. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein said gas has the paramagnetic properties substantially the same as oxygen.

3. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein said gas includes oxygen.

4. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein said gas is air.

5. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein the heat sink member further comprises a plurality of fins.

6. (Original) The magnetically enhanced convection heat sink of Claim 5 wherein the fins are in contact with the gas flow moving through the heat sink from the first location to the second location.

7. (Withdrawn) The magnetically enhanced convection heat sink of Claim 1 wherein the magnetic source further comprises a permanent magnet.

8. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein the magnetic source further comprises an electromagnet.

9. (Original) The magnetically enhanced convection heat sink of Claim 1 further comprising first and second components magnetically coupled with said magnetic source, said components being spaced apart such that the spacing between the components is greater at the second location than the first location, said magnetic source producing a magnetic field between said components, and said heat sink member positioned between said components.

10. (Original) The magnetically enhanced convection heat sink of Claim 9 wherein at least one of said components has a portion that curves away from the other component from the first location to the second location, thereby creating a magnetic gradient that drives the gas through the heat sink.

11. (Original) The magnetically enhanced convection heat sink of Claim 5 wherein said fins have major heat dissipating surfaces, said fins positioned between said magnetic components with their major heat dissipating surfaces generally parallel to the direction of gas flow through the heat sink.

12. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein the heat sink member is of a thermally conductive material such as aluminum.

13. (Original) The magnetically enhanced convection heat sink of Claim 9 wherein said components are of a ferromagnetic material such as iron.

14. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein said magnetic source is thermally connected to said heat sink member and is located within the gas flow from the first location to the second location.

15. (Original) The magnetically enhanced convection heat sink of Claim 9 wherein said magnetic source further comprises a plurality of magnets positioned in spaced apart relation relative to each other, the spacing of the magnets being such that the magnetic flux is spread generally evenly across said components.

16. (Original) The magnetically enhanced convection heat sink of Claim 15 wherein said magnets are spaced apart in a generally lateral direction relative to said gas flow path.

17. (Original) The magnetically enhanced convection heat sink of Claim 9 wherein said magnetic source further comprises a plurality of spaced apart magnets magnetically coupled with said first and second components, said components having lateral outside edges, said magnets being generally laterally spaced relative to each other with the outermost magnets positioned inwardly from said lateral outside edges of said components.

18. (Original) The magnetically enhanced convection heat sink of Claim 17 wherein said heat sink member further comprises a plurality of fins positioned within spaces between said magnets, said magnets and fins being located within the gas flow from the first location to the second location.

19. (Original) The magnetically enhanced convection heat sink of Claim 18 wherein at least one of said fins is located laterally outwardly of the outermost of said magnets.

20. (Original) The magnetically enhanced convection heat sink of Claim 10 wherein said magnetic gradient is greater than about 1 Tesla/cm.

21. (Original) The magnetically enhanced convection heat sink of Claim 20 wherein the magnetic field strength at said first location is greater than about 0.5 Tesla.

22. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein said heat source is an electronic device.

23. (Original) The magnetically enhanced convection heat sink of Claim 1 wherein:

the heat sink is located in a gravitational field,

the heat sink being oriented such that the first location is lower in the gravitational field than the second location so that the convection induced by the magnetic field is substantially aligned with the convection induced by gravity.

24. (Original) A magnetically enhanced convection heat sink for use with a gas that exhibits paramagnetic properties, said heat sink comprising:

a heat sink member for dissipating heat from a heat source,

a magnetic source creating a magnetic field, said heat sink member positioned within said magnetic field and in a gas flow path between a first location and a second location,

said heat sink member heating said gas entering the heat sink at the first location, wherein as the gas becomes warmer the gas is displaced by cooler gas causing the warmer gas to move toward the second location as it is further heated by the surface of the heat sink.

25. (Original) In combination a heat source generating heat, and a magnetically enhanced convection heat sink for use with a gas that exhibits paramagnetic properties, said combination comprising:

a heat source generating heat;

a magnetically enhanced convection heat sink, said heat sink further comprising:

a heat sink member for dissipating heat from said heat source,

a magnetic source creating a magnetic field concentrated at a first location, the intensity of the magnetic field decreasing from the first location to a second location, said heat sink member positioned within said magnetic field and in said gas flow path between the first location and the second location,

said heat sink member heating said gas entering the heat sink at the first location, wherein as the gas becomes warmer the gas is displaced by cooler gas causing the warmer gas to move toward the second location as it is further heated by the surface of the heat sink thereby cooling said heat source.

26. (Original) The combination of Claim 25 wherein said heat source is an electronic device.

27. (Original) The combination of Claim 25 wherein said heat sink is configured to create a magnetic gradient that drives the air through the heat sink.

28. (Original) The combination of Claim 26 wherein said gas has paramagnetic properties substantially the same as oxygen.

29. (Original) The combination of Claim 28 wherein said gas includes oxygen.

30. (Original) The combination of Claim 26 wherein said gas is air.

31. (Original) The combination of Claim 26 wherein the heat sink member further comprises a plurality of fins.

32. (Original) The combination of Claim 31 wherein the fins are in contact with the gas flow moving through the heat sink from the first location to the second location.

33. (Original) The combination of Claim 32, said heat sink further comprising first and second components magnetically coupled with said electronic device, said components being spaced apart such that the spacing between the components is greater at the second location than the first location, said magnetic source producing a magnetic field between said components, and said heat sink member positioned between said components.

34. (Original) The combination of Claim 33 wherein at least one of said components has a portion that curves away from the other component from the first location to the second location, thereby creating a magnetic gradient that drives the gas through the heat sink.

35. (Original) The combination of Claim 34 wherein the volumetric magnetic force that drives the gas through the heat sink is generally constant in at least a throat section where cooler gas enters the heat sink.

36. (Original) The combination of Claim 35 wherein said fins have major heat dissipating surfaces, said fins positioned between said magnetic components with their major heat dissipating surfaces generally parallel to the direction of gas flow through the heat sink, and wherein said magnetic source is thermally connected to said heat sink member and is located within the gas flow from the first location to the second location.

37. (Original) A method of convecting heat from a heat source utilizing a gas that exhibits paramagnetic properties, said method comprising the steps of:

providing a heat sink member for dissipating heat from said heat source;

creating a magnetic field concentrated at a first location, the intensity of the magnetic field decreasing from the first location to a second location;

positioning said heat sink member within said magnetic field and in said gas flow path between the first location and the second location,

said heat sink member heating said gas entering the heat sink at the first location, wherein as the gas becomes warmer the warmer gas is displaced by cooler gas causing the warmer gas to move toward the second location as it is further heated by the surface of the heat sink.

38. (Original) The method of Claim 37 wherein the heat sink member further comprises a plurality of fins, said method further comprising the step of positioning said fins in

contact with the gas flow moving through the heat sink from the first location to the second location.

39. (Original) The method of Claim 37 further comprising the step of creating a magnetic gradient that drives the gas from the first location to the second location.

40. (Original) The method of Claim 39 further comprising the step of locating said magnetic source within the gas flow from the first location to the second location.

41. (Original) The method of Claim 40 wherein said magnetic gradient produces a substantially constant force that drives the gas from the first location to the second location.

42. (Original) The method of Claim 37 wherein the said heat sink member has a thermal conductivity on the order of a metal such as aluminum.

43. (Original) An assembly for dissipating heat in a gas environment where the gas exhibits paramagnetic properties, said assembly comprising:

a heat source;

a magnetic source creating magnetic fields at first and second locations, the magnetic field created at said first location being stronger than the magnetic field created at said second location, thereby causing gas to flow from said first location to said second location;

said heat source thermally coupled with a heat dissipating surface positioned within the gas flow between said first and second locations.

44. (Original) The assembly of Claim 43 wherein said heat source is thermally coupled with said heat dissipating surface by direct thermal contact with said surface.

45. (Withdrawn) The assembly of Claim 43 wherein said magnetic source further comprises a permanent magnet.

46. (Original) The assembly of Claim 43 wherein said magnetic source further comprises an electromagnet.

47. (Original) A magnetically enhanced convection heat sink for use with a gas that exhibits paramagnetic properties, said heat sink comprising:

a magnetic source;

at least one component magnetically coupled with said magnetic source;

said magnetic source and said at least one component being configured to channel magnetic flux to a gap where the magnetic flux is concentrated, said gap being located within a gas flow path through the heat sink.

48. (Withdrawn) The magnetically enhanced convection heat sink of Claim 47 wherein said at least one component further comprises a U-shaped member having first and second portions, said magnetic source being mounted to one of such portions and creating a gap with the other of said portions, said gap being located within said gas flow path.

49. (Withdrawn) The magnetically enhanced convection heat sink of Claim 48 wherein said U-shaped member has openings in a wall thereof, said openings being located within said gas flow path to facilitate the movement of gas through the heat sink.

50. (Withdrawn) The magnetically enhanced convection heat sink of Claim 48 wherein said gap is of generally constant width over the length of the magnet in the general direction of gas flow through the gap.

51. (Original) The magnetically enhanced convection heat sink of Claim 48 wherein the width of said gap increases from a first location to a second location in the general direction of the gas flow through the gap.

52. (Previously presented) The magnetically enhanced convection heat sink of Claim 1, wherein the magnetic source further comprises an induction coil of the heat source.

53. (Previously presented) The magnetically enhanced convection heat sink of Claim 1, wherein the heat sink is shaped and dimensioned such that the heat sink has an acoustic mode having a first frequency associated therewith, the magnetic field having a second frequency therewith, the first and the second frequencies causing the magnetic field to resonate with the acoustic mode, whereby airflow through the heat sink increases.

54. (Previously presented) The magnetically enhanced convection heat sink of Claim 1, wherein the magnetic source further comprises an electromagnet powered by a power supply adapted to respond to a temperature of the heat source to maintain the heat source at a pre-selected temperature.

55. (Previously presented) The combination of Claim 26, wherein the magnetic source further comprising an induction coil of the electronic device.

56. (Previously presented) The combination of Claim 25, wherein the heat sink is shaped and dimensioned such that the heat sink has an acoustic mode having a first frequency associated therewith, the magnetic field having a second frequency therewith, the first and the second frequencies causing the magnetic field to resonate with the acoustic mode, whereby airflow through the heat sink increases.

57. (Previously presented) The combination of Claim 25, further comprising a power supply powering the magnetic source, the magnetic source being an electromagnet, the power supply responding to a temperature of the heat source to maintain the heat source at a pre-selected temperature.

58. (Previously presented) The method of Claim 37 wherein the creating a magnetic field further comprises using an induction coil of the heat source.

59. (Previously presented) The method of Claim 37 further comprising shaping and dimensioning the heat sink such that the heat sink has an acoustic mode associated therewith,

and causing the magnetic field to resonate with the acoustic mode, whereby airflow through the heat sink increases.

60. (Previously presented) The method of Claim 37 further comprising adjusting the magnetic field in response to a temperature of the heat source to maintain the heat source at a pre-selected temperature.

61. (Previously presented) The assembly of Claim 43, wherein said magnetic source further comprises an induction coil of the heat source.

62. (Previously presented) The assembly of Claim 43, wherein the assembly is shaped and dimensioned such that the assembly has an acoustic mode having a first frequency associated therewith, the magnetic field having a second frequency therewith, the first and the second frequencies causing the magnetic field to resonate with the acoustic mode, whereby airflow through the assembly increases.

63. (Previously presented) The assembly of Claim 43, further comprising a power supply powering the magnetic source and adjusting the power in response to a temperature of the heat source to maintain the heat source at a pre-selected temperature.

64. (Previously presented) The magnetically enhanced convection heat sink of Claim 47, wherein the gas flow path is shaped and dimensioned such that the gas flow path has an acoustic mode having a first frequency associated therewith, the magnetic source having a second frequency therewith, the first and the second frequencies causing the magnetic field of the magnetic source to resonate with the acoustic mode, whereby airflow through the gas flow path increases.